	Type	L #	Hits	Search Text	DBs	Time Stamp	Comments	Error Definition	Errors
1	BRS	L1	340067	protein$6	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/09/07 13:14			0
2	BRS	L2	1120495	isolat$3 or purif$7	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/09/07 13:15			0
3	BRS	L3	99749	1 same 2	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/09/07 13:15			0
4	BRS	L4	46588	magnetic same solid	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/09/07 13:16			0
5	BRS	L5	305	3 same 4	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/09/07 13:16			0
6	BRS	L6	55614	hydrophobic same hydrophilic	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/09/07 13:17			0
7	BRS	L7	93333	hydroxyl same (alkyl or aryl)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/09/07 13:17			0
8	BRS	L8	43	4 same (6 or 7)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/09/07 13:19			0
9	BRS	L9	1	3 same 8	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/09/07 13:18			0
10	BRS	L10	3	8 same 2	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/09/07 13:22			0
11	BRS	L11	6	8 same 1	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/09/07 13:27			0

	Type	L #	Hits	Search Text	DBs	Time Stamp	Comments	Error Definition	Errors
12	BRS	L12	24557	magnetic adj particle	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/09/07 13:51			0
13	BRS	L13	132	12 same (6 or 7)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/09/07 13:28			0
14	BRS	L14	14	13 same 3	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/09/07 13:50			0
15	BRS	L15	1280886	automat$3	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/09/07 13:50			0
16	BRS	L16	6366	magnetic adj separation	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/09/07 13:51			0
17	BRS	L17	5	16 same (6 or 7)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/09/07 13:52			0
18	BRS	L18	0	17 same 3	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/09/07 13:52			0
19	BRS	L19	159	(10 or 11 or 16) same 15	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/09/07 13:53			0
20	BRS	L20	0	(10 or 11 or 17) same 15	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/09/07 13:54			0
21	BRS	L21	25692	mass adj spectrometry	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/09/07 13:53			0
22	BRS	L22	1	(10 or 11 or 17) same 21	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/09/07 13:54			0

	Type	L #	Hits	Search Text	DBs	Time Stamp	Comments	Error Definition	Errors
23	BRS	L23	3	rauth adj holger.in.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/09/07 13:55			0
24	BRS	L24	8	reinhardt adj richard.in.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/09/07 13:55			0
25	BRS	L25	6	nordhoff adj eckhard.in.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/09/07 13:55			0
26	BRS	L26	11	kalkum adj markus.in.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/09/07 13:56			0
27	BRS	L27	1	(23 or 24 or 25 or 26) and 3	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/09/07 13:56			0

```
=> file medline caplus biosis embase scisearch agricola
COST IN U.S. DOLLARS                            SINCE FILE      TOTAL
                                                   ENTRY    SESSION
FULL ESTIMATED COST                                 0.21       0.21

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FILE 'SCISEARCH' ENTERED AT 14:00:52 ON 07 SEP 2003
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FILE 'AGRICOLA' ENTERED AT 14:00:52 ON 07 SEP 2003

=> s protein?
   4 FILES SEARCHED...
L1     7603565 PROTEIN?

=> s isolat? or purif?
L2     5192160 ISOLAT? OR PURIF?

=> s l1 (p) l2
L3     1186670 L1 (P) L2

=> s Magnetic (p) (solid or particle or separat?)
L4      178305 MAGNETIC (P) (SOLID OR PARTICLE OR SEPARAT?)

=> s (hydrophilic or hydroxyl) (p) (hydrophobic or alkyl or aryl)
L5       60340 (HYDROPHILIC OR HYDROXYL) (P) (HYDROPHOBIC OR ALKYL OR ARYL)

=> s l4 (p) l5
L6         162 L4 (P) L5

=> s l3 (p) l6
L7           1 L3 (P) L6

=> d l7 1 ibib abs

L7   ANSWER 1 OF 1  BIOSIS  COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER:   1987:386321  BIOSIS
DOCUMENT NUMBER:    BA84:72818
TITLE:              BACKBONE DYNAMICS OF A MODEL MEMBRANE PROTEIN ASSIGNMENT OF
                    THE CARBONYL CARBON CARBON-13 NMR RESONANCES IN
                    DETERGENT-SOLUBILIZED M13 COAT PROTEIN.
AUTHOR(S):          HENRY G D; WEINER J H; SYKES B D
CORPORATE SOURCE:   MED. RES. COUNCIL GROUP IN PROTIEN STRUCTURE AND FUNCTION,
                    UNIV. ALBERTA, EDMONTON, ALBERTA, T6G 2H7.
SOURCE:             BIOCHEMISTRY, (1987) 26 (12), 3619-3626.
                    CODEN: BICHAW. ISSN: 0006-2960.
FILE SEGMENT:       BA; OLD
LANGUAGE:           English
AB   The major coat   ***protein***   of the filamentous bacteriophage M13 is a
     50-residue amphiphilic polypeptide which is inserted, as an integral
     membrane-spanning   ***protein***   , in the inner membrane of the
     Escherichia coli host during infection. 13C was incorporated
     biosynthetically into a total of 23 of the peptide carbonyls using labeled
     amino acids (alanine, glycine, lysine, phenylalanine, and proline). The
     structure and dynamics of carbonyl-labeled M13 coat   ***protein***   were
     monitored by 13C nuclear   ***magnetic***   resonance (NMR) spectroscopy.
     Assignment of many resonances was achieved by using protease digestion, pH
     titration, or labeliing of the peptide bond with both 13C and 15N. The
     carbonyl region of the natural-abundance 13C NMR spectrum of M13 coat
       ***protein***   in sodium dodecyl sulfate solution shows approximately
     eight backbone carbonyl resonances with line widths much narrower than the
     rest. Three of these more mobile residues correspond to assigned peaks
     (glycine-3, lysine-48, and  alanine-49) in the individual amino acid
     spectra, and another almost certainly arises from glutamic acid-2. A ninth
```

residue, alanine-1, also gives rise to a very narrow carbonyl resonance if the pH is well above or below the pKa of the terminal amino group. These data suggest that only about four residues at either end of the ***protein*** experience large-amplitude spatial fluctuations; the rest of the molecule is essentially rigid ont he time scale of the overall rotational tumbling of the ***protein*** -detergent complex. The relative exposure of different regions of detergent-bound ***protein*** was monitored by limited digestion with ***proteinase*** K. The N-terminal ***hydrophilic*** region was very readily removed by the enzyme, and a stable core ***particle*** was ***isolated*** which contained the ***hydrophobic*** region and most of the C-terminal segment. Comparable spectra and digestion patterns were obtained when the ***protein*** was solubilized in sodium deoxycholate, suggesting that the coat ***protein*** binds both amphiphiles in a similar fashion.

=> d his

(FILE 'HOME' ENTERED AT 14:00:28 ON 07 SEP 2003)

FILE 'MEDLINE, CAPLUS, BIOSIS, EMBASE, SCISEARCH, AGRICOLA' ENTERED AT 14:00:52 ON 07 SEP 2003

```
L1      7603565 S PROTEIN?
L2      5192160 S ISOLAT? OR PURIF?
L3      1186670 S L1 (P) L2
L4       178305 S MAGNETIC (P) (SOLID OR PARTICLE OR SEPARAT?)
L5        60340 S (HYDROPHILIC OR HYDROXYL) (P) (HYDROPHOBIC OR ALKYL OR ARYL)
L6          162 S L4 (P) L5
L7            1 S L3 (P) L6

=> s magnetic particle
L8        11161 MAGNETIC PARTICLE

=> s magnetic separation
L9         9870 MAGNETIC SEPARATION

=> s (l8 or l9) (p) l2
L10        1623 (L8 OR L9) (P) L2

=> s l10 (p) l5
L11           2 L10 (P) L5

=> duplicate remove l11
DUPLICATE PREFERENCE IS 'CAPLUS, SCISEARCH'
KEEP DUPLICATES FROM MORE THAN ONE FILE?  Y/(N):n
PROCESSING COMPLETED FOR L11
L12           1 DUPLICATE REMOVE L11 (1 DUPLICATE REMOVED)

=> s l12 not l7
L13           1 L12 NOT L7

=> d l13 1 ibib abs

L13  ANSWER 1 OF 1  CAPLUS  COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER:         2002:620703  CAPLUS
DOCUMENT NUMBER:          137:283810
TITLE:                    Water-Based Magnetic Fluids as Extractants for
                          Synthetic Organic Compounds
AUTHOR(S):                Moeser, Geoffrey D.; Roach, Kaitlin A.; Green, William
                          H.; Laibinis, Paul E.; Hatton, T. Alan
CORPORATE SOURCE:         Department of Chemical Engineering, Massachusetts
                          Institute of Technology, Cambridge, MA, 02139, USA
SOURCE:                   Industrial & Engineering Chemistry Research (2002),
                          41(19), 4739-4749
                          CODEN: IECRED; ISSN: 0888-5885
PUBLISHER:                American Chemical Society
DOCUMENT TYPE:            Journal
LANGUAGE:                 English
```

AB A class of water-based magnetic fluids specifically tailored to ext. sol. org. compds. from water is discussed. These magnetic fluids, prepd. by pptn., consist of a suspension of .apprx.7.5 nm magnetite (Fe3O4) nanoparticles coated with a .apprx.9 nm bifunctional polymer layer comprised of an outer ***hydrophilic*** poly(ethylene oxide) (PEO) region for colloidal stability and an inner ***hydrophobic*** poly(propylene oxide) (PPO) region for org. compd. solubilization. Particles exhibited a high capacity for org. solutes, with partition coeffs. between the polymer coating and water on the order of 103-105,

consistent with values reported for solubilization of these orgs. in PEO-PPO-PEO block copolymer micelles. In bench-scale expts. a high-gradient ***magnetic*** ***sepn*** . (HGMS) could recover nanoparticles at 98% efficiency. Process options for particle regeneration in water ***purifn*** . applications are discussed.
REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d his

(FILE 'HOME' ENTERED AT 14:00:28 ON 07 SEP 2003)

FILE 'MEDLINE, CAPLUS, BIOSIS, EMBASE, SCISEARCH, AGRICOLA' ENTERED AT 14:00:52 ON 07 SEP 2003
L1 7603565 S PROTEIN?
L2 5192160 S ISOLAT? OR PURIF?
L3 1186670 S L1 (P) L2
L4 178305 S MAGNETIC (P) (SOLID OR PARTICLE OR SEPARAT?)
L5 60340 S (HYDROPHILIC OR HYDROXYL) (P) (HYDROPHOBIC OR ALKYL OR ARYL)
L6 162 S L4 (P) L5
L7 1 S L3 (P) L6
L8 11161 S MAGNETIC PARTICLE
L9 9870 S MAGNETIC SEPARATION
L10 1623 S (L8 OR L9) (P) L2
L11 2 S L10 (P) L5
L12 1 DUPLICATE REMOVE L11 (1 DUPLICATE REMOVED)
L13 1 S L12 NOT L7

=> s l6 (p) surface
L14 58 L6 (P) SURFACE

=> s l14 (p) l3
L15 0 L14 (P) L3

=> s agarose
L16 103737 AGAROSE

=> s l16 (p) l4
L17 188 L16 (P) L4

=> s l17 (p) l3
L18 28 L17 (P) L3

=> duplicate remove l18
DUPLICATE PREFERENCE IS 'MEDLINE, CAPLUS, BIOSIS, EMBASE, SCISEARCH'
KEEP DUPLICATES FROM MORE THAN ONE FILE? Y/(N):n
PROCESSING COMPLETED FOR L18
L19 13 DUPLICATE REMOVE L18 (15 DUPLICATES REMOVED)

=> d l19 1-13 ibib abs

L19 ANSWER 1 OF 13 MEDLINE on STN DUPLICATE 1
ACCESSION NUMBER: 2003372630 IN-PROCESS
DOCUMENT NUMBER: 22788903 PubMed ID: 12906907
TITLE: Novel purification system for 6xHis-tagged proteins by magnetic affinity separation.
AUTHOR: Frenzel Andre; Bergemann Christian; Kohl Gabi; Reinard Thomas
CORPORATE SOURCE: Lehrgebiet Molekulargenetik, Universitat Hannover, Herrenhauser Strasse 2, D-30419 Hannover, Germany.
SOURCE: J Chromatogr B Analyt Technol Biomed Life Sci, (2003 Aug 15) 793 (2) 325-9.
Journal code: 101139554. ISSN: 1570-0232.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: IN-PROCESS; NONINDEXED; Priority Journals
ENTRY DATE: Entered STN: 20030809
Last Updated on STN: 20030905
AB We have developed a novel nickel-silica matrix for the generation of ***magnetic*** beads for metal-ion affinity chromatography. In contrast to ***magnetic*** Ni-NTA ***agarose*** beads, the novel ***particle*** type (SiMAC) consists of a ***magnetic*** core and a nickel-silica composite matrix with the nickel ions tightly integrated in the silica. This results in a much higher number of chelating groups compared with Ni-NTA ***agarose*** beads. With the SiMAC beads,

greatly improved ***purification*** of histidine-tagged ***proteins*** from crude bacterial extracts was achieved. The yield was at least twice as high as with conventional materials, the method is faster, since the coupling step is omitted and there is no need for handling toxic Ni(2+) salts.

L19 ANSWER 2 OF 13 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2002:258168 CAPLUS
DOCUMENT NUMBER: 138:21449
TITLE: A purification system for his-tag proteins using magnetic separator
AUTHOR(S): Nishiya, Yoshiaki; Kitabayashi, Masao; Ikeda, Katsunori
CORPORATE SOURCE: Tsuruga Institute of Biotechnology, Toyobo Co., Ltd., Japan
SOURCE: Jikken Igaku (2002), 20(3), 479-482
CODEN: JIIGEF; ISSN: 0288-5514
PUBLISHER: Yodosha
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese
AB A review on automatic protein purifn. of recombinant His-tag proteins using magnetic nickel agarose bead in 96-well plates. Also given were the principle of the magnetic nickel agarose protein isolation, and isolation of Histidine hexamer-tag sarcosine oxidase manufd. with recombinant E. coli.

L19 ANSWER 3 OF 13 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2002:585377 BIOSIS
DOCUMENT NUMBER: PREV200200585377
TITLE: Study of protein interactions using functionalized affinity membranes: A new approach for proteomics research.
AUTHOR(S): Springer, A. L. (1); Gall, A. S. (1); Hughes, K. A. (1); Kaiser, R. J. (1); Li, G. (1); Lund, K. P. (1)
CORPORATE SOURCE: (1) Prolinx, Inc, Bothell, WA USA
SOURCE: Abstracts of the General Meeting of the American Society for Microbiology, (2002) Vol. 102, pp. 159. http://www.asmusa.org/mtgsrc/generalmeeting.htm. print. Meeting Info.: 102nd General Meeting of the American Society for Microbiology Salt Lake City, UT, USA May 19-23, 2002 American Society for Microbiology . ISSN: 1060-2011.
DOCUMENT TYPE: Conference
LANGUAGE: English
AB Elucidating mechanisms of bacterial virulence requires understanding interactions of bacterial ***proteins*** with host ***proteins*** and with signaling molecules. To study such interactions using a systems approach, techniques are needed that are reliable, universal for any ***protein*** , and are amenable to automation. Prolinx(R), Inc. has developed a novel chemical affinity system for specific immobilization of ***proteins*** and other macromolecules. The system is based on the specific interaction of two small synthetic molecules, phenyl(di)boronic acid (P(D)BA) and salicylhydroxamic acid (SHA). The use of this technology to reproducibly immobilize biomolecules on a number of ***solid*** supports (such as microtiter plates, ***agarose*** or ***magnetic*** ***particles***) has been demonstrated. In this study, the versatility of this technology on functionalized membranes is presented. E. coli beta-galactosidase was used as a model system to demonstrate feasibility of using SHA membranes as a surface for immobilization, ***solid*** phase assays and controlled release of macromolecules. Conjugation of active ***protein*** with PDBA was performed in solution independent of the immobilization step on the SHA membranes. The resulting PDBA-beta-galactosidase conjugate was immobilized directly without ***purification*** . SHA-membranes show high capacity for ***protein*** conjugation and enable excellent assay sensitivities. They are convenient to handle and store and can be used in multiple formats including those compatible with high-throughput analyses. The features demonstrated using this system make SHA-membranes a convenient platform for proteomics research.

L19 ANSWER 4 OF 13 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1999:194649 CAPLUS
DOCUMENT NUMBER: 131:57471
TITLE: Purification of recombinant human interferon-.alpha. by magnetic affinity microsphere
AUTHOR(S): Guo, Li'an; Zhu, Baoquan; Chen, Daijie
CORPORATE SOURCE: The Central Laboratory, Fourth Military Medical University, Xi'an, 710033, Peop. Rep. China

SOURCE: Disi Junyi Daxue Xuebao (1999), 20(1), 85-88
CODEN: D[redacted]KEG; ISSN: 1000-2790
PUBLISHER: Disi Junyi Daxue Xuebao Bianjibu
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB A new method for ***sepg*** . recombinant human interferon-.alpha. by ***magnetic*** affinity microsphere (MAMS) was provided. The ***magnetic*** powders were embedded in ***agarose*** to form the ***magnetic*** ***agarose*** microsphere (MS). Monoclonal antibody (McAb) was linked up matrix by CNBr methods. The coupled rate and capacity of ligand to link up matrix was affected by quantities of CNBr and McAb. The couple capacity and rate of McAb on the surface of MS was 15.1 g L-1 MS and 75.3%, when CNBr 200 g L-1 MS and McAb 20 g L-1 MS were added. The purity of rhIFN-.alpha. ***purified*** by one-step MAMS was recognized as 88% by SDS-PAGE with Coomassie Blue. The activity recovery was 70%. The MS synthesized was a good matrix to link up large mol. ***proteins*** and could be used to ***purify*** ***proteins*** . The MAMS was a more simple and rapid method for ***isolating*** highly ***purified*** ***proteins*** from suspension than classical affinity chromatog.

L19 ANSWER 5 OF 13 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1999:760838 CAPLUS
DOCUMENT NUMBER: 132:206648
TITLE: Synthesis of immunomagnetic microsphere and its use for separation of recombinant human interleukin-2
AUTHOR(S): Guo, Li'an; Chen, Wanlu; Zhu, Baoquan; Chen, Daijie
CORPORATE SOURCE: Central Laboratory, the Fourth Military Medical University, Xi'an, 710032, Peop. Rep. China
SOURCE: Xibao Yu Fenzi Mianyixue Zazhi (1999), 15(1), 47-50
CODEN: XFMZFM; ISSN: 1007-8738
PUBLISHER: Disi Junyi Daxue
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB The synthesis of immunomagnetic microsphere (IMMS) of monoclonal antibodies (mAb) to recombinant human interleukin-2 (rhIL-2) as ligand bound to Fe3O4- ***agarose*** ***magnetic*** microsphere (MMS) and ***sepn*** . for rhIL-2 from suspension of inclusion body were attempted. The ***magnetic*** microsphere was prepd. by phys. wrapper encapsulation. After reaction, the ***magnetic*** powers were enveloped in the middle of ***agarose*** . The ***magnetic*** microsphere was coupled with anti-rhIL-2 mAbs to form immunomagnetic microsphere. The coupling of mAb with MMS was by CNBr methods. The IMMS was used to ***sep*** . rhIL-2 from a suspension of inclusion bodies. The purity of rhIL-2 ***purified*** by this one step IMMS method reached 93%, specific activity 2.0 .times. 106 IU/mg ***protein*** , and ratio of activity 80%. This method can ***sep*** . ***protein*** from suspension, and is simple and fast.

L19 ANSWER 6 OF 13 MEDLINE on STN DUPLICATE 2
ACCESSION NUMBER: 1998188532 MEDLINE
DOCUMENT NUMBER: 98188532 PubMed ID: 9528099
TITLE: Preparation of magnetic immobilized metal affinity separation media and its use in the isolation of proteins.
AUTHOR: Abudiab T; Beitle R R Jr
CORPORATE SOURCE: Department of Chemical Engineering, University of Arkansas, Fayetteville 72701, USA.
SOURCE: JOURNAL OF CHROMATOGRAPHY. A, (1998 Feb 6) 795 (2) 211-7.
Journal code: 9318488.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199804
ENTRY DATE: Entered STN: 19980430
Last Updated on STN: 19980430
Entered Medline: 19980423
AB A new method of pseudobiospecific ***protein*** ***isolation*** is developed and tested, which employs both metal affinity and magnetism as the basis for ***isolation*** . The chelating group iminodiacetic acid (IDA) has been coupled to the surface of ***magnetic*** ***agarose*** , and when charged with metal ions (Cu2+ or Zn2+) is capable of binding model ***proteins*** which display metal affinity, and of ***separating*** ***protein*** mixtures. ***Magnetic*** properties of the medium facilitated the batch recovery of the adsorbent, as losses are minimized by concentrating and retaining the ***separation*** medium with the aid of a magnet. Model

proteins were used to characterize ***protein*** adsorption, capacity, and stability of I[redacted] ***magnetic*** ***agaros[redacted]** . Recovery from a cell lysate was demonstrated by ***protein*** ***isolation*** from extracts of E. coli containing a target ***protein*** . Overall, this study effectively illustrates the engineering of ***separation*** media which combine several desired properties for the development of a new branch of metal affinity-based bioseparation.

L19 ANSWER 7 OF 13 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN
ACCESSION NUMBER: 1998:178461 SCISEARCH
THE GENUINE ARTICLE: YY298
TITLE: Preparation of magnetic immobilized metal affinity separation media and its use in the isolation of proteins
AUTHOR: Abudiab T; Beitle R R (Reprint)
CORPORATE SOURCE: UNIV ARKANSAS, DEPT CHEM ENGN, BELL ENGN CTR 3202, FAYETTEVILLE, AR 72701 (Reprint); UNIV ARKANSAS, DEPT CHEM ENGN, BELL ENGN CTR 3202, FAYETTEVILLE, AR 72701
COUNTRY OF AUTHOR: USA
SOURCE: JOURNAL OF CHROMATOGRAPHY A, (6 FEB 1998) Vol. 795, No. 2, pp. 211-217.
Publisher: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS.
ISSN: 0021-9673.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS; LIFE
LANGUAGE: English
REFERENCE COUNT: 48

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB A new method of pseudobiospecific ***protein*** ***isolation*** is developed and tested, which employs both metal affinity and magnetism as the basis for ***isolation*** . The chelating group iminodiacetic acid (IDA) has been coupled to the surface of ***magnetic*** ***agarose*** , and when charged with metal ions (Cu2+ or Zn2+) is capable of binding model ***proteins*** which display metal affinity, and of ***separating*** ***protein*** mixtures. ***Magnetic*** properties of the medium facilitated the batch recovery of the adsorbent, as losses are minimized by concentrating and retaining the ***separation*** medium with the aid of a magnet. Model ***proteins*** were used to characterize ***protein*** adsorption, capacity, and stability of IDA ***magnetic*** ***agarose*** . Recovery from a cell lysate was demonstrated by ***protein*** ***isolation*** from extracts of E. coli containing a target ***protein*** . Overall, this study effectively illustrates the engineering of ***separation*** media which combine several desired properties for the development of a new branch of metal affinity-based bioseparation. (C) 1998 Elsevier Science B.V.

L19 ANSWER 8 OF 13 MEDLINE on STN DUPLICATE 3
ACCESSION NUMBER: 1998288750 MEDLINE
DOCUMENT NUMBER: 98288750 PubMed ID: 9627061
TITLE: Efficient purification of mouse anti-FGF receptor IgM monoclonal antibody by magnetic beads.
AUTHOR: Quitadamo I J; Schelling M E
CORPORATE SOURCE: Department of Genetics and Cell Biology, Washington State University, Pullman 99164-4234, USA.
SOURCE: HYBRIDOMA, (1998 Apr) 17 (2) 199-207.
Journal code: 8202424. ISSN: 0272-457X.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199808
ENTRY DATE: Entered STN: 19980828
Last Updated on STN: 19980828
Entered Medline: 19980817

AB Affinity chromatography has been widely used for the ***purification*** of monoclonal antibodies (MAb). Traditionally, activated ***agarose*** beads conjugated with specific antisera have been used as a ***solid*** support in chromatographic ***protein*** ***purification*** . ***Magnetic*** beads conjugated with various antibodies have recently become an alternative method for the ***isolation*** of diverse ***proteins*** , nucleic acids, and cell types. In this study, murine anti-fibroblast growth factor receptor 1 (FGFR1) immunoglobulin M (IgM) was ***isolated*** from ***protein*** solutions to compare immunoaffinity column chromatography and ***magnetic*** bead IgM ***purification*** methods. Using immobilized rat anti-mouse IgM MAb,

an UltraLink 1-ethyl-3-(3-dimethylaminopropyl)carboiimide (EDC)/diaminodipropylamine (DPA) immunoaffinity column and polystyrene-coated ***magnetic*** beads were used for the ***purification*** of mouse IgM from bovine serum albumin/phosphate-buffered saline (BSA/PBS) as well as from crude ascites. ***Protein*** quantitation and percent IgM yield were determined by reducing SDS-PAGE electrophoresis followed by silver staining, then IgM and ***protein*** contaminants were quantitated using densitometry analysis. IgM anti-FGFR1 binding specificity and immunologic activity were determined by enzyme-linked immunosorbant assay (ELISA). This study demonstrates that ***magnetic*** bead ***isolation*** of IgM from ascites is more effective than traditional affinity chromatography ***purification*** as determined by greater IgM yield, purity, and immunologic activity.

L19 ANSWER 9 OF 13 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1995:240209 CAPLUS
DOCUMENT NUMBER: 122:50386
TITLE: Preparation and evaluation of magnetic metal chelating affinity supports
AUTHOR(S): O'Brien, S. M.; Thomas, O. R. T.; Dunnill, P.
CORPORATE SOURCE: Advanced Cent. Biochem. Eng., Univ. Coll. London, London, WC1E 7JE, UK
SOURCE: IChemE Res. Event, Two-Day Symp. (1994), Volume 1, 159-61. Inst. Chem. Eng.: Rugby, UK.
CODEN: 60NQAL
DOCUMENT TYPE: Conference
LANGUAGE: English
AB The employment of affinity ***sepn*** . early on in the downstream ***purifn*** . process should reduce the overall no. of steps required and increase efficiency and yield. Superparaferromagnetic immobilized metal affinity supports have demonstrated selective ***protein*** ***sepn*** . through binding surface accessible histidines residues on ***proteins*** . ***Magnetic*** supports are micron-sized and non-porous and less susceptible to fouling than porous ***agarose*** supports. In addn. their high ferromagnetic content means efficient ***magnetic*** ***sepn*** . and their small size and large surface are implies high ***protein*** binding capacities. Ferromagnetic-iminodiacetate-Cu2+ supports were prepd. by a series of coating and coupling steps. Batch binding studies to compare the capacity of novel ferromagnetic to conventional ***agarose*** metal affinity supports were performed with cytochrome c ***proteins*** .

L19 ANSWER 10 OF 13 MEDLINE on STN DUPLICATE 4
ACCESSION NUMBER: 92061033 MEDLINE
DOCUMENT NUMBER: 92061033 PubMed ID: 1952930
TITLE: A magnetizable solid phase for enzyme extraction.
AUTHOR: Ennis M P; Wisdom G B
CORPORATE SOURCE: Division of Biochemistry, Queen's University of Belfast, Northern Ireland, UK.
SOURCE: APPLIED BIOCHEMISTRY AND BIOTECHNOLOGY, (1991 Aug) 30 (2) 155-64.
Journal code: 8208561. ISSN: 0273-2289.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199112
ENTRY DATE: Entered STN: 19920124
Last Updated on STN: 19970203
Entered Medline: 19911202
AB A method for the convenient and reliable preparation of magnetizable ***agarose*** beads containing iron ***particles*** is described. The beads were treated with the triazine dye, Reactive Red 120, and the matrix was examined for the ability to extract ***proteins*** from crude preparations using lactate dehydrogenase from porcine muscle as a model. The recovery and specific activity values of enzyme obtained using this matrix and ***magnetic*** field ***separation*** were significantly greater than those for enzyme ***purified*** by centrifugation and conventional dye ligand chromatography.

L19 ANSWER 11 OF 13 MEDLINE on STN DUPLICATE 5
ACCESSION NUMBER: 87080612 MEDLINE
DOCUMENT NUMBER: 87080612 PubMed ID: 3792466
TITLE: Purification of the bovine lens isozymes which reduce fructose diphosphate to sorbitol diphosphate.
AUTHOR: Srivastava S K; Ansari N H; Lerman S
CONTRACT NUMBER: EY 01677 (NEI)

SOURCE: EXPERIMENTAL EYE RESEARCH, (1986 Oct) 43 (4) 669-77.
Journal code: 0370707. ISSN: 0014-4835.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198702
ENTRY DATE: Entered STN: 19900302
Last Updated on STN: 19970203
Entered Medline: 19870211

AB Three isozymes of an enzyme which reduce fructose 1, 6-diphosphate (FDP) to sorbitol 1, 6-diphosphate (SDP) in the presence of NADH have been ***purified*** from bovine lens. The isozymes were fractionated by acid precipitation of the lens homogenate followed by DE-52 column chromatography. This step ***separated*** the FDP reducing activity into three major peaks, peak 1, peak 2, and peak 3. Each of these peaks were further ***purified*** by affinity chromatography using Reactive blue-2- ***agarose*** , Sephadex G-150 gel filtration, and DE-52 column chromatography. Polyacrylamide disc gel electrophoresis demonstrated the presence of one major isozyme and one minor isozyme in each of the three peaks. The Km values for FDP were 8.0, 5.7, and 4.7 mM for peaks 1, 2, and 3 respectively. The reaction product SDP was characterized by nuclear ***magnetic*** resonance spectroscopy. All the isozymes utilized pyruvate as substrate with the Km for peaks 1, 2, and 3 being 0.63, 0.20, and 0.09 mM respectively. These studies therefore indicate that FDP reducing activity and lactate dehydrogenase activity co- ***purify*** and may be expressed by the same enzyme ***protein*** .

L19 ANSWER 12 OF 13 MEDLINE on STN DUPLICATE 6
ACCESSION NUMBER: 83202072 MEDLINE
DOCUMENT NUMBER: 83202072 PubMed ID: 6846811
TITLE: Novel effective immunoadsorbents based on agarose-polyaldehyde microsphere beads: synthesis and affinity chromatography.
AUTHOR: Margel S; Offarim M
SOURCE: ANALYTICAL BIOCHEMISTRY, (1983 Feb 1) 128 (2) 342-50.
Journal code: 0370535. ISSN: 0003-2697.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198306
ENTRY DATE: Entered STN: 19900318
Last Updated on STN: 19900318
Entered Medline: 19830610

AB ***Agarose*** -polyaldehyde microsphere beads were produced by encapsulating polyacrolein microspheres or polyglutaraldehyde microspheres with ***agarose*** . ***Magnetic*** beads were formed by carrying out the encapsulation procedure in the presence of ferrofluidic ***particles*** . ***Proteins*** were bound covalently, at physiological pH, to the beads through their aldehyde groups to produce the Schiff base products. The conjugates, beads- ***proteins*** , were used successfully in affinity chromatography for specific ***purification*** of antibodies. Leaching of the ***proteins*** bound to the beads under physiological conditions and eluting conditions was not detected. The ***agarose*** -polyaldehyde microsphere beads are suggested as alternatives to the supports currently used in affinity chromatography.

L19 ANSWER 13 OF 13 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1982:558992 CAPLUS
DOCUMENT NUMBER: 97:158992
TITLE: Agarose polyacrolein microsphere beads. New effective immunoadsorbents
AUTHOR(S): Margel, Shlomo
CORPORATE SOURCE: Dep. Plast. Res., Weizmann Inst. Sci., Rehovot, Israel
SOURCE: FEBS Letters (1982), 145(2), 341-4
CODEN: FEBLAL; ISSN: 0014-5793
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Polyacrolein microspheres, synthesized from acrolein by radiation-induced polymn. (Margel, S. et al., 1982), were encapsulated in ***agarose*** to form 50-150-.mu.m-diam. beads which were bound covalently at physiol. pH to e.g. ***proteins*** , antibodies, lectins, hormones, or drugs and then used as immunoadsorbents in affinity chromatog. A spacer of polylysine-glutaraldehyde, used to join the ligands to the beads, improved binding capacity. ***Magnetic*** beads were formed by doing the

encapsulation procedure in the presence of ***magnetic*** ***particles*** (Ferrofl[redacted]). The beads maintained their [redacted]ys. and mech. properties after amino ligand coupling, and nonspecific adsorption of ***proteins*** to the beads does not occur. The beads were used for the ***isolation*** of antibodies by their adsorption to beads contg. appropriate immobilized antigens and elution with 0.2M glycine-HCl buffer at pH 2.4. After elution, the beads can be washed with phosphate-buffered saline, stored at 4.degree. in the presence of 0.05% NaN3, and used repeatedly over 6 mo without loss of antibody-binding capacity.

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=> d his

     (FILE 'HOME' ENTERED AT 14:00:28 ON 07 SEP 2003)

     FILE 'MEDLINE, CAPLUS, BIOSIS, EMBASE, SCISEARCH, AGRICOLA' ENTERED AT
     14:00:52 ON 07 SEP 2003
L1      7603565 S PROTEIN?
L2      5192160 S ISOLAT? OR PURIF?
L3      1186670 S L1 (P) L2
L4       178305 S MAGNETIC (P) (SOLID OR PARTICLE OR SEPARAT?)
L5        60340 S (HYDROPHILIC OR HYDROXYL) (P) (HYDROPHOBIC OR ALKYL OR ARYL)
L6          162 S L4 (P) L5
L7            1 S L3 (P) L6
L8        11161 S MAGNETIC PARTICLE
L9         9870 S MAGNETIC SEPARATION
L10        1623 S (L8 OR L9) (P) L2
L11           2 S L10 (P) L5
L12           1 DUPLICATE REMOVE L11 (1 DUPLICATE REMOVED)
L13           1 S L12 NOT L7
L14          58 S L6 (P) SURFACE
L15           0 S L14 (P) L3
L16      103737 S AGAROSE
L17         188 S L16 (P) L4
L18          28 S L17 (P) L3
L19          13 DUPLICATE REMOVE L18 (15 DUPLICATES REMOVED)

=> s mass spectrometry
L20     430688 MASS SPECTROMETRY

=> s automat?
L21     502309 AUTOMAT?

=> s (l7 or l13 or l19) and (l20 or l21)
L22           2 (L7 OR L13 OR L19) AND (L20 OR L21)

=> duplicate remove l22
DUPLICATE PREFERENCE IS 'CAPLUS, BIOSIS'
KEEP DUPLICATES FROM MORE THAN ONE FILE?  Y/(N):n
PROCESSING COMPLETED FOR L22
L23           2 DUPLICATE REMOVE L22 (0 DUPLICATES REMOVED)

=> d l23 1-2 ibib abs

L23  ANSWER 1 OF 2  CAPLUS  COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER:         2002:258168  CAPLUS
DOCUMENT NUMBER:          138:21449
TITLE:                    A purification system for his-tag proteins using
                          magnetic separator
AUTHOR(S):                Nishiya, Yoshiaki; Kitabayashi, Masao; Ikeda,
                          Katsunori
CORPORATE SOURCE:         Tsuruga Institute of Biotechnology, Toyobo Co., Ltd.,
                          Japan
SOURCE:                   Jikken Igaku (2002), 20(3), 479-482
                          CODEN: JIIGEF; ISSN: 0288-5514
PUBLISHER:                Yodosha
DOCUMENT TYPE:            Journal; General Review
LANGUAGE:                 Japanese
AB   A review on ***automatic*** protein purifn. of recombinant His-tag
     proteins using magnetic nickel agarose bead in 96-well plates. Also given
     were the principle of the magnetic nickel agarose protein isolation, and
     isolation of Histidine hexamer-tag sarcosine oxidase manufd. with
     recombinant E. coli.

L23  ANSWER 2 OF 2  BIOSIS  COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER:   2002:585377  BIOSIS
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DOCUMENT NUMBER: PREV200200585377
TITLE: Study of prot[redacted] interactions using functional[redacted]d affinity membranes: A new approach for proteomics research.
AUTHOR(S): Springer, A. L. (1); Gall, A. S. (1); Hughes, K. A. (1); Kaiser, R. J. (1); Li, G. (1); Lund, K. P. (1)
CORPORATE SOURCE: (1) Prolinx, Inc, Bothell, WA USA
SOURCE: Abstracts of the General Meeting of the American Society for Microbiology, (2002) Vol. 102, pp. 159. http://www.asmusa.org/mtgsrc/generalmeeting.htm. print. Meeting Info.: 102nd General Meeting of the American Society for Microbiology Salt Lake City, UT, USA May 19-23, 2002 American Society for Microbiology . ISSN: 1060-2011.
DOCUMENT TYPE: Conference
LANGUAGE: English
AB Elucidating mechanisms of bacterial virulence requires understanding interactions of bacterial ***proteins*** with host ***proteins*** and with signaling molecules. To study such interactions using a systems approach, techniques are needed that are reliable, universal for any ***protein*** , and are amenable to ***automation*** . Prolinx(R), Inc. has developed a novel chemical affinity system for specific immobilization of ***proteins*** and other macromolecules. The system is based on the specific interaction of two small synthetic molecules, phenyl(di)boronic acid (P(D)BA) and salicylhydroxamic acid (SHA). The use of this technology to reproducibly immobilize biomolecules on a number of ***solid*** supports (such as microtiter plates, ***agarose*** or ***magnetic*** ***particles***) has been demonstrated. In this study, the versatility of this technology on functionalized membranes is presented. E. coli beta-galactosidase was used as a model system to demonstrate feasibility of using SHA membranes as a surface for immobilization, ***solid*** phase assays and controlled release of macromolecules. Conjugation of active ***protein*** with PDBA was performed in solution independent of the immobilization step on the SHA membranes. The resulting PDBA-beta-galactosidase conjugate was immobilized directly without ***purification*** . SHA-membranes show high capacity for ***protein*** conjugation and enable excellent assay sensitivities. They are convenient to handle and store and can be used in multiple formats including those compatible with high-throughput analyses. The features demonstrated using this system make SHA-membranes a convenient platform for proteomics research.

=> d his

(FILE 'HOME' ENTERED AT 14:00:28 ON 07 SEP 2003)

FILE 'MEDLINE, CAPLUS, BIOSIS, EMBASE, SCISEARCH, AGRICOLA' ENTERED AT 14:00:52 ON 07 SEP 2003

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L1      7603565 S PROTEIN?
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L3      1186670 S L1 (P) L2
L4       178305 S MAGNETIC (P) (SOLID OR PARTICLE OR SEPARAT?)
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L6          162 S L4 (P) L5
L7            1 S L3 (P) L6
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L10        1623 S (L8 OR L9) (P) L2
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L17         188 S L16 (P) L4
L18          28 S L17 (P) L3
L19          13 DUPLICATE REMOVE L18 (15 DUPLICATES REMOVED)
L20      430688 S MASS SPECTROMETRY
L21      502309 S AUTOMAT?
L22           2 S (L7 OR L13 OR L19) AND (L20 OR L21)
L23           2 DUPLICATE REMOVE L22 (0 DUPLICATES REMOVED)
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=> log y

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CA SUBSCRIBER PRICE	-4.56	-4.56

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